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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/967,028

09/28/2001

Simon Dodd

10013432 -1

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7590

01/25/2005

HEWLETT-PACKARD COMPANY

Intellectual Property Administration

P.O. Box 272400

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EXAMINER

BROOKE, MICHAEL S

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/967,028

Applicant(s)

DODD, SIMON

Examiner

Michael S. Brooke

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-11 and 29-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3 and 7-11 is/are allowed.
- 6) ☒ Claim(s) 29-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuber et al. (6,196,651) in view of Kneezel et al. (5,881,451) and Kulka et al. (5,483,827).

Zuber teaches a replaceable ink cartridge having a thermal sense resistor (TSR)(16), which has a first resistance and a memory (15) for storing the value of the TSR (col. 3:54-67 and col. 4:1-2).

Zuber teaches the claimed invention with the exception of:

- The TSR having a resistance capable of being adjusted by one or more of the bits stored in the memory device (claim 34).
- The bit is a fusible bit (claim 35).

- The resistance is capable of being adjusted after manufacture of the memory.
- A controller coupled to memory (claim 37).

Kneezel teaches an ink jet print head having a thermal sense resistor (TSR) (R_t). The resistor is coupled to a fusible shoring bar (30), which modifies the resistance of the thermal sense resistor. This enables the accuracy of the TSR to be increased, thereby enabling a more accurate determination of the print head temperature (col. 5:4-10).

Kulka teaches that memories such as, fusible link, ROM, RAM, SRAM and EPROM are art recognized equivalents for their use in storing data. Because these different types of memories were art recognized equivalents at the time the invention was made, one of ordinary skill in the ink jet art would have found it obvious to have modified Zuber to use a fusible link memory for the purpose of selecting and storing the value of the TSR in a known alternative manner.

It would have been obvious to one of ordinary skill in the ink jet art, at the time the invention was made, to have provided Zuber with a TSR that is coupled to a resistance modifier that is a conductor that shorts a portion of the TSR, for the purpose of increasing the accuracy of the TSR to enable a more accurate determination of the print head temperature, as taught by Kneezel.

The combination of Zuber, Kneezel and Kulka teaches that the measured resistance value may be stored in a fusible bit memory, as opposed, to a memory such as an EPROM. The measured value of the TSR would then be set by blowing one of

the fusible bits in the fusible bit memory, as is conventional. A controller would necessarily carry out this operation.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zuber et al. (6,196,651) in view of Kneezel et al. (5,881,451).

With respect to claim 29, Zuber teaches a replaceable ink cartridge having a thermal sense resistor (TSR)(16) that is coupled to the print head and a memory device that stores the value of the TSR (col. 3:54-67 and col. 4:1-2).

Zuber teaches the claimed invention with the exception of the TSR having an adjustable resistance that may be adjusted multiple times.

Kneezel teaches Kneezel teaches an ink jet print head having a thermal sense resistor (TSR) (R_t). The resistor is coupled to a fusible shoring bar (30), which modifies the resistance of the thermal sense resistor. This enables the accuracy of the TSR to be increased, thereby enabling a more accurate determination of the print head temperature (col. 5:4-10). Kneezel further teaches that the fusible links may be severed in any combination (col. 7:7-10). Thus, the adjustable resistance is adjusted multiple times.

It would have been obvious to one of ordinary skill in the ink jet art, at the time the invention was made, to have provided Zuber with a TSR that is coupled to a resistance modifier that is a conductor that shorts a portion of the TSR, for the purpose of increasing the accuracy of the TSR to enable a more accurate determination of the print head temperature, as taught by Kneezel.

Claims 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuber et al. (6,196,651) in view of Kneezel et al. (5,881,451), as applied to claim 29 above, and further in view of Kulka et al. (5,483,827).

Zuber, as modified, teaches the claimed invention with the exception of:

- The resistance value is represented by a plurality of fusible bits. (Claim 30)
- The fusible bits are set by blowing a resistor. (Claim 31)
- The adjustable resistance is capable of being set after manufacture of the memory device. (Claim 32)
- A controller coupled to the print head. (Claim 33)

Kneezel teaches Kneezel teaches an ink jet print head having a thermal sense resistor (TSR) (R_t). The resistor is coupled to a fusible shoring bar (30), which modifies the resistance of the thermal sense resistor. This enables the accuracy of the TSR to be increased, thereby enabling a more accurate determination of the print head temperature (col. 5:4-10).

Kulka teaches that memories such as, fusible link, ROM, RAM, SRAM and EPROM are art recognized equivalents for their use in storing data. Because these different types of memories were art recognized equivalents at the time the invention was made, one of ordinary skill in the ink jet art would have found it obvious to have modified Zuber to use a fusible link memory for the purpose of selecting and storing the value of the TSR in a known alternative manner.

It would have been obvious to one of ordinary skill in the ink jet art, at the time the invention was made, to have provided Zuber with a TSR that is coupled to a resistance modifier that is a conductor that shorts a portion of the TSR, for the purpose of increasing the accuracy of the TSR to enable a more accurate determination of the print head temperature, as taught by Kneezel.

The combination of Zuber, Kneezel and Kulka teaches that the measured resistance value may be stored in a fusible bit memory, as opposed, to a memory such as an EPROM. The measured value of the TSR would then be set by blowing one of the fusible bits in the fusible bit memory, as is conventional. A controller would necessarily carry out this operation. Furthermore, the memory must exist before the information can be stored, therefore, the resistance would be adjusted after the manufacturer of the memory.

Response to Arguments

Applicant's arguments filed 01/11/05 have been fully considered but they are not persuasive.

The Applicant's argument that Zuber does not teach an adjustable resistance that may be adjusted multiple times is not persuasive. As discussed above, the adjustable resistance of Kneezel may be adjusted in any combination. Therefore, the resistance would be adjusted multiple times. For example, if two links were served, the resistance would have been adjusted twice.

The Applicant's argument that neither Zuber nor Kneezel disclose changing one or more of the plurality of bits stored in the memory device is not persuasive. The shorting bar (30) of Kneezel is a memory. Kneezel discloses severing one or more of the fusible links. Thus, the claimed limitation is met.

Allowable Subject Matter

Claims 1-3 and 7-11 allowed.

The following is an examiner's statement of reasons for allowance:

The prior art of record fails to teach a memory that store a plurality of fusible bits representing a first resistance of a thermal sense resistor and pen uniqueness information.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bhaskar et al. (5,635,968) teaches an ink cartridge having a memory that comprises a plurality of fusible links to represent to uniquely identify the cartridge. While, a TSR is present, the TSR is analog and does not store data using fusible bits.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael S. Brooke whose telephone number is 571 272-2142. The examiner can normally be reached on M-F 5:30-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael S. Brooke
Primary Examiner
Art Unit 2853

MSB
01/21/05